abcam

ab316356

Anti-Cytochrome b245 Light Chain/p22-phox antibody [CS9]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Preservative: 0.1% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Native Full Length Protein corresponding to Human Cytochrome b-245 light chain. Database link P13498
Clone number	CS9
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1/100
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	-

WB

Tested

Species	Human
Dilution info	1 µg/mL
Notes	-

Target data

See full target information Cytochrome b-245 light chain

Function	Subunit of NADPH oxidase complexes that is required for the NADPH oxidase activity that generates, in various cell types, superoxide from molecular oxygen utilizing NADPH as an electron donor (PubMed:15824103, PubMed:17140397, PubMed:38355798). Subunit of the phagocyte NADPH oxidase complex that mediates the transfer of electrons from cytosolic NADPH to O2 to produce the superoxide anion (O2(-)) (PubMed:38355798). In the activated complex, electrons are first transferred from NADPH to flavin adenine dinucleotide (FAD) and subsequently transferred via two heme molecules to molecular oxygen, producing superoxide through an outer-sphere reaction (PubMed:38355798). Activation of the NADPH oxidase complex is initiated by the assembly of cytosolic subunits of the NADPH oxidase complex with the core NADPH oxidase complex to form a complex at the plasma membrane or phagosomal membrane (PubMed:38355798). This activation process is initiated by phosphorylation dependent binding of the cytosolic NCF1/p47-phox subunit to the C-terminus of CYBA/p22-phox (PubMed:19948736). Aassociates with NOX3 to form a functional NADPH oxidase constitutively generating superoxide (PubMed:15824103, PubMed:17140397).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1 month
Appropriate short-term storage conditions	+4°C

Appropriate long-term storage conditions	-20°C
Storage information	Avoid freeze / thaw cycle

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The Cytochrome b245 Light Chain also known as p22-phox or CYBA plays a significant role in the NADPH oxidase complex. This protein has a molecular mass of approximately 22 kDa and is widely expressed in various cell types particularly in those associated with the immune system such as neutrophils. p22-phox forms part of the membrane-bound flavocytochrome b558 along with gp91-phox which is important for the generation of reactive oxygen species.
Biological function summary	The p22-phox serves as a core component of the NADPH oxidase complex which is integral to cellular responses to infection and stress. It operates in conjunction with other cytosolic subunits to produce reactive oxygen species that help in microbial destruction and signal transduction. The presence of p22-phox is essential for proper enzyme assembly and function as its interaction with gp91-phox establishes the electron transport chain required for oxidase activity.
Pathways	P22-phox contributes to the oxidative burst pathway a critical mechanism in innate immunity. In this pathway its interactions with proteins like Rac a small GTPase facilitate the activation and membrane association of the oxidase complex. Additionally p22-phox has involvement in inflammatory pathways by aiding in the release of signaling molecules that trigger inflammatory responses. This protein cooperates with components of the MAPK signaling pathway acting as a mediator in signal transduction events that dictate cellular responses to external stimuli.
Associated diseases and disorders	P22-phox links closely with chronic granulomatous disease (CGD) a disorder characterized by a malfunctioning NADPH oxidase complex. Mutations in the CYBA gene can lead to defects in reactive oxygen species generation compromising the immune system's ability to combat infections. Furthermore evidence suggests a connection between p22-phox and cardiovascular diseases including hypertension where abnormalities in oxidase activity influence endothelial function. Proteins such as gp91-phox also share these disease associations highlighting the cooperative interaction of these components in disease pathology.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

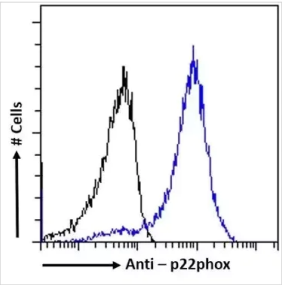
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

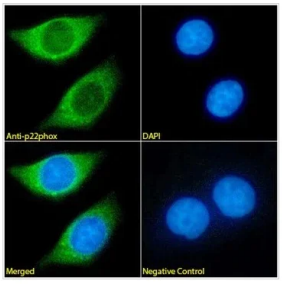
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5 product images



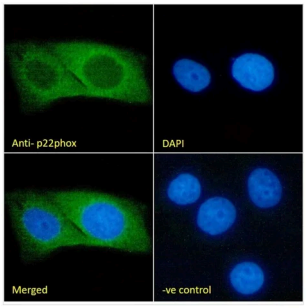
Flow Cytometry - Anti-Cytochrome b245 Light Chain/p22-phox Antibody [CS9] (ab316356)

Blue line: Flow cytometric analysis of MCF7 (Human breast adenocarcinoma cell line) cells. Primary incubation 1hr (1:100 dilution) followed by Alexa Fluor 488 ® conjugated goat Anti-mouse IgG (1:1000 dilution). Black line: Anti-Unknown Specificity Isotype control.



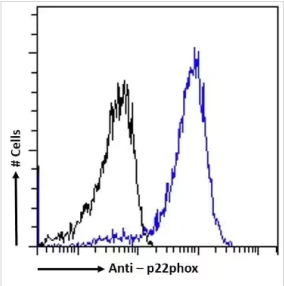
Immunocytochemistry/ Immunofluorescence - Anti-Cytochrome b245 Light Chain/p22-phox Antibody [CS9] (ab316356)

Immunofluorescence analysis of paraformaldehyde fixed MCF7 (Human breast adenocarcinoma cell line) cells. Primary incubation 1hr (1:100 dilution) followed by Alexa Fluor® 488 secondary antibody (1:1000 dilution), showing cytoplasmic staining. The nuclear stain is DAPI (blue). Negative control: Mouse IgG1 negative control followed by Alexa Fluor® 488 secondary antibody.



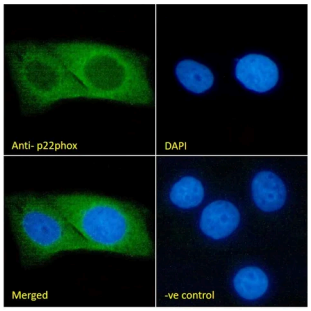
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Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.